**Remarks/Arguments:**

Claims 1, 43, and 44 have been amended as suggested by the Examiner in the Advisory Action mailed April 10, 2006 in order to properly recite the directional nature of the claimed limitation. Claims 25-27 and 33-42 have been withdrawn from consideration. Claims 1-7, 9-24, 28-33, 43, and 44 are under consideration.

The Examiner is thanked for the indication in the Advisory Action that the provisional double patenting rejection has been overcome.

**Claim rejections under 35 U.S.C. §§102 and 103**

Claims 1-7, 10-21, 24, 43, and 44 have been rejected under 35 U.S.C. §102(a) and/or (e) as being anticipated by U.S. Patent Application Publication No. 2003/0134154 to Kirino et al. ("Kirino"). Claim 8 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Kirino as evidenced by U.S. Patent No. 6,150,015 to Bertero et al. ("Bertero"). Claim 8 has been canceled, rendering the rejection of claim 8 moot. By this amendment, Applicants respectfully traverse the rejections of claims 1-7, 10-21, 24, 43, and 44.

Amended independent claim 1, which has been amended to include the limitations of claim 8, recites, *inter alia*, a magneto-optical recording medium comprising a recording layer having a plurality of columns; and a first under layer which is placed below said recording layer and which functions as a nucleus for said columns, wherein the width of a structural unit of said first under layer is substantially 2 nm or less. The plurality of columns extends in a film thickness direction.

Amended independent claim 43, which has been amended to include the limitations of claim 8, recites, *inter alia*, a method of recording on a magneto-optical recording medium comprising providing a recording layer having a plurality of columns, providing a first under

layer which is placed below the recording layer and which functions as a nucleus for the columns, wherein the width of a structural unit of said first under layer is substantially 2 nm or less, and wherein the plurality of columns extends in a film thickness direction, and a data write step of writing predetermined data to the recording layer.

Amended independent claim 44, which has been amended to include the limitations of claim 8, recites, *inter alia*, a method of reproduction from a magneto-optical recording medium comprising providing a recording layer having a plurality of columns, providing a first under layer which is placed below the recording layer and which functions as a nucleus for the columns, wherein the width of a structural unit of said first under layer is substantially 2 nm or less, and wherein the plurality of columns extends in a film thickness direction, and a data readout step of reading out predetermined data written to the recording layer.

Kirino discloses a recording medium that includes an inorganic compound 12 formed on a substrate 11. A magnetic recording layer 13 is formed on top of the inorganic compound 12. Kirino teaches a thickness of the inorganic compound layer 12 that is equal to 30 nm. Para [0028]. Kirino also teaches that it is desirable that a thickness of the inorganic compound layer lies within a range from 10 nm or more to 100 nm or less. Para [0011]. Kirino goes on to state that a lower limit of the layer thickness (the 10 nm limit) is equal to the thickness at which the inorganic compound layer can be stably formed. Para [0011]. Emphasis added. This statement in Kirino teaches that a stable layer of less than 10 nm cannot be formed.

Since each of claim 1, 43, and 44, as amended, recites an under layer size of substantially 2 nm or less that is significantly smaller than Kirino's self-imposed limit of 10 nm or more, Applicants respectfully submit that Kirino teaches away from an under layer as

small as the substantially 2 nm or less limit recited in each of claims 1, 43, and 44. Since Kirino teaches away from the claimed subject matter, one having skill in the art would believe that a 2 nm or less under layer is not stable. It would be assumed that such a small under layer was unworkable, and would not even look to Bertero to rectify the deficiency of Kirino with respect to claims 1, 43, and 44.

Also, since the prior teaching of Kirino eschews under layers smaller than 10 nm, Applicants respectfully submit that the invention recited in each of claims 1, 43, and 44 has blazed a new trail in this technology. Applicants respectfully submit that it would not be obvious to one of ordinary skill in the art to optimize the size of the grains to the 2 nm or less size as claimed, but that one of ordinary skill in the art would stop at a size as large as 10 nm, assuming that smaller sizes for under layers were not stable and would not operate.

Further, the Office Action argues that it would be obvious to one having ordinary skill in the art to optimize the size of the grains by optimizing the results effective through routine experimentation. However, since Kirino teaches a lower limit of 10 nm being the smallest stable size for the under layer, there is no incentive to experiment with sizes less than 10 nm. Therefore, there is no incentive to combine the teaching of Kirino and Bertero as suggested by the Office Action to arrive at the claimed invention.

For at least the reasons set forth above, Applicants respectfully submit that the rejections of claims 1, 43, and 44, as amended, are improper, and respectfully request reconsideration and allowance of claims 1, 43, and 44.

Claims 2-7, 10-21, 24 each depend, either directly or indirectly, from claim 1, and Applicants respectfully submit that claims 2-7, 10-21, 24 are patentable over the cited prior art for at least the same reasons as set forth above with respect to claim 1.

Claims 9 and 30-32 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kirino as applied above, and further in view of U.S. Patent No. 5,106,703 to Carcia ("Carcia"). Claims 9 and 30-32 all depend, either directly or indirectly, from claim 1, and Applicants respectfully submit that claims 9 and 30-32 are all patentable over the cited prior art for the same reasons as set forth above with respect to claim 1. Applicants submit that Carcia does not rectify the deficiency heretofore stated with respect to Kirino.

Claims 22 and 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kirino as applied above, and further in view of U.S. Patent No. 5,106,703 to Kirino et al. (Kirino II") Claims 22 and 23 both depend, either directly or indirectly, from claim 1, and Applicants respectfully submit that claims 22 and 23 are both patentable over the cited prior art for the same reasons as set forth above with respect to claim 1. Applicants submit that Kirino II does not rectify the deficiency heretofore stated with respect to Kirino.

Claims 28 and 29 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kirino as applied above, and further in view of Birukawa ("Birukawa"). While paragraph 12 in the Office Action states "Claims 29 and 29", a telephone discussion between Applicants' representative and the Examiner on December 29, 2005 clarified that the Office Action should state "Claims 28 and 29." Claims 28 and 29 both depend, either directly or indirectly, from claim 1, and Applicants respectfully submit that claims 28 and 29 are both patentable over the cited prior art for the same reasons as set forth above with respect to claim 1. Applicants submit that Birukawa does not rectify the deficiency heretofore stated with respect to Kirino.

In view of the foregoing, Applicants request the withdrawal of the §103(a) rejections directed to claims 2-7, 9-24, and 28-33.

**Conclusion**

In light of the amendments to claims 1, 43, and 44, Applicants respectfully submit that pending claims 1-7, 9-24, 28-32, 43, and 44 are in condition for allowance. Entry of the amendments and prompt reexamination and allowance of same is respectfully requested.

Respectfully submitted,

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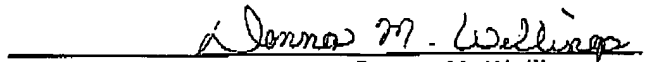

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